

Request for Reconsideration
NOR-089 (BA0367.1)
U.S.S.N. 09/632,294
Page 2

Listing of Claims:

- 1 1. (Previously presented) A method of interfacing with network
2 management information on a network device, comprising:
3 receiving a non-object oriented management information database
4 (MIB) at a compiler of a network device, the non-object oriented MIB
5 including information related to one or more aspects of the network
6 device;
7 extracting a subset of information from the non-object oriented
8 MIB describing at least one aspect of the network device; and
9 producing an object-oriented interface, for use by an object-
10 oriented application to access the subset of information in the non-object
11 oriented MIB, by generating a set of object-oriented classes and object-
12 oriented methods corresponding to the subset of information in the non-
13 object oriented MIB.
- 1 2. (Previously presented) The method of claim 1, wherein information in the
2 non-object oriented MIB corresponds to a set of network parameters
3 organized in a hierarchy and used to describe aspects of the network
4 device.
- 1 3. (Previously presented) The method of claim 1, wherein:
2 extracting information from the non-object oriented MIB further
3 includes lexically recognizing a set of tokens corresponding to a set of
4 network parameters that describes aspects of the network device and
5 parsing the tokens according to a hierarchical relationship between the
6 set of parameters; and
7 generating a set of object-oriented classes and object-oriented
8 methods includes generating a set of object-oriented classes and object-

Request for Reconsideration
NOR-089 (BA0367.1)
U.S.S.N. 09/632.294
Page 3

- 9 oriented methods corresponding to the lexically recognized and parsed
10 tokens.
- 1 4. (Previously presented) The method of claim 1, wherein a relationship
2 among the object-oriented classes is a hierarchy that corresponds to the
3 non-object oriented MIB.
- 1 5. (Original) The method of claim 1, wherein the methods generated include
2 methods capable of accessing and manipulating objects instantiated
3 from at least one of the object-oriented classes.
- 1 6. (Previously presented) The method of claim 5, wherein the methods
2 include one or more of the operations used to operate on the non-object
3 oriented MIB.
- 1 7. (Previously presented) The method of claim 6, wherein the operations
2 used to operate on the non-object oriented MIB are selected from a group
3 of operations including get, set, and test of SNMP (simple network
4 management protocol) variables.
- 1 8. (Previously presented) A method of interfacing with network
2 management information on a network device, comprising:
3 providing a non-object oriented management information database
4 (MIB) including information related to one or more aspects of a network
5 device; and
6 using a set of object-oriented classes and object-oriented methods
7 to access the non-object oriented MIB and the information related to one
8 or more aspects of the network device.
- 1 9. (Previously presented) The method of claim 8, wherein information in the
2 non-object oriented MIB corresponds to a set of network parameters

Request for Reconsideration
NOR-089 (BA0367.1)
U.S.S.N. 09/632,294
Page 4

3 organized in a hierarchy and capable of describing aspects of the network
4 device.

1 10. (Previously presented) The method of claim 8, wherein the relationship
2 among the object-oriented classes is a hierarchy that corresponds to the
3 non-object oriented MIB.

1 11. (Original) The method of claim 8, wherein the object-oriented methods
2 are capable of accessing and manipulating objects instantiated from at
3 least one of the object-oriented classes.

1 12. (Previously presented) The method of claim 11, wherein the object-
2 oriented methods correspond to one or more of the operations used to
3 operate on the non-object oriented MIB.

1 13. (Previously presented) The method of claim 12, wherein the one or more
2 operations used to operate on the non-object oriented MIB are selected
3 from a group of operations including get, set, and test of SNMP (simple
4 network management protocol) variables.

1 14. (Previously presented) An apparatus to interface with network
2 management information on a network device, comprising:
3 a receiver module configured to receive a non-object oriented
4 management information database (MIB) including information related to
5 one or more aspects of the network device;
6 an extraction module configured to extract a subset of information
7 from the non-object oriented MIB describing at least one aspect of the
8 network device; and
9 a generation module configured to produce an object-oriented
10 interface, for use by an object-oriented application to access the subset
11 of information in the non-object oriented MIB, by generating a set of

Request for Reconsideration
NOR-089 (BA0367.1)
U.S.S.N. 09/632.294
Page 5

12 object-oriented classes and object-oriented methods corresponding to the
13 subset of information in the non-object oriented MIB.

1 15. (Previously presented) The apparatus of claim 14, wherein information in
2 the non-object oriented MIB corresponds to a set of network parameters
3 organized in a hierarchy and used to describe the network device.

1 16. (Previously presented) The apparatus of claim 14, wherein:
2 the extraction module extracts information from the non-object
3 oriented MIB by lexically recognizing a set of tokens corresponding to a
4 set of network parameters describing the device and parsing the tokens
5 according to a hierarchical relationship between the set of parameters;
6 and
7 the generation module generates a set of object-oriented classes
8 and object-oriented methods according to the lexically recognized and
9 parsed tokens.

1 17. (Previously presented) The apparatus of claim 14, wherein the
2 relationship among the object-oriented classes is a hierarchy that
3 corresponds to the non-object oriented MIB.

1 18. (Original) The apparatus of claim 14, wherein the object-oriented
2 methods generated include object-oriented methods capable of accessing
3 and manipulating objects instantiated from at least one of the object-
4 oriented classes.

1 19. (Previously presented) The apparatus of claim 18, wherein the object-
2 oriented methods include one or more of the operations used to operate
3 on the non-object oriented MIB.

- 1 20. (Previously presented) The apparatus of claim 19, wherein the
2 operations used to operate on the non-object oriented MIB are selected
3 from a group of operations including get, set, and test of SNMP (simple
4 network management protocol) variables.
- 1 21. (Previously presented) An apparatus for interfacing with network
2 management information on a network device, comprising:
3 a first storage area configured to store a non-object oriented
4 management information base (MIB) including information related to one
5 or more aspects of a network device; and
6 a second storage area configured to store a set of object-oriented
7 classes and object-oriented methods that is used to access the non-
8 object oriented MIB and the information related to one or more aspects of
9 the network device.
- 1 22. (Previously presented) An apparatus comprising a computer-readable
2 storage medium tangibly embodying a program instructions for creating
3 an interface to obtain network management information, the program
4 instructions including instructions operable to cause a processor to:
5 receive a non-object oriented management information database
6 (MIB) including information related to one or more aspects of a network
7 device;
8 extract a subset of information from the non-object oriented MIB
9 describing at least one aspect of the network device; and
10 produce an object-oriented interface, for use by an object-oriented
11 application to access the subset of information in the non-object oriented
12 MIB, by generating a set of object-oriented classes and object-oriented
13 methods corresponding to the subset of information in the non-object
14 oriented MIB.

1 23. (Previously presented) An apparatus comprising a computer-readable
2 storage medium tangibly embodying program instructions for creating an
3 interface to obtain network management information, the program
4 instructions including instructions operable to cause a processor to:

5 provide a non-object oriented management information base (MIB)
6 including information related to one or more aspects of a network device;
7 and

8 use a set of object-oriented classes and object-oriented methods to
9 access the non-object oriented MIB and the information related to one or
10 more aspects of the network device.

1 24. (Previously presented) An apparatus for interfacing with network
2 management information on a network device, comprising:

3 means for receiving a non-object oriented management information
4 database (MIB) including information related to one or more aspects or a
5 network device;

6 means for extracting a subset of information from the non-object
7 oriented MIB describing at least one aspect of the network device; and

8 means for producing an object-oriented interface, for use by an
9 object-oriented application to access the subset of information in the
10 non-object oriented MIB, by generating a set of object-oriented classes
11 and object-oriented methods corresponding to the subset of information
12 in the non-object oriented MIB.

1 25. (Cancelled)

1 26. (Previously presented) A method of interfacing with network
2 management information on a network device, comprising:

3 adding a new network device to a network of one or more network
4 devices, the new network device and each of the one or more network

Request for Reconsideration
NOR-089 (BA0367.1)
U.S.S.N. 09/632,294
Page 8

5 devices having one or more network management parameters stored in a
6 non-object oriented management information database (MIB);
7 distributing an object-oriented network management application to
8 the new network device from the one or more network devices, the object-
9 oriented network management application operable to generate an
10 object-oriented request for one or more network parameters stored in a
11 non-object oriented MIB;
12 determining that the network management application is
13 requesting one or more network parameters stored locally in the non-
14 object oriented MIB of the new network device;
15 creating a native variable interface, the native variable interface
16 being an object-oriented application interface that provides direct access
17 to the one or more network parameters stored locally using object-
18 oriented classes and methods; and
19 accessing the one or more network parameters stored locally
20 through the native variable interface.

1 27. (Previously presented) The method of claim 26, wherein the step of
2 creating a native variable interface includes initially accessing indirectly
3 one or more network parameters stored locally that describe features of
4 the new network device using a loopback address of the new network
5 device, including sending an simple network management protocol
6 (SNMP) protocol data unit (PDU) to the loopback address of the new
7 network device, the SNMP PDU to retrieve the one or more network
8 parameters stored locally that describe features of the new network
9 device, and using the features of the new network device to customize the
10 native variable interface.

- 1 28. (Previously presented) The method of claim 27, wherein the step of
2 sending an SNMP PDU to the new type of network device includes using
3 an SNMP stack associated with the new network device.
- 1 29. (Previously presented) The method of claim 27, wherein the step of
2 accessing indirectly one or more network parameters stored locally that
3 describe features of the new network device includes generating an
4 object-oriented method call for the one or more network parameters
5 stored locally that describe features of the new network device, and
6 converting the object-oriented method call into the SNMP PDU.
- 1 30. (Previously presented) The method of claim 29, wherein the SNMP PDU
2 includes one or more SNMP operations selected from the group of get, set
3 and test.